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## **Supplemental Material**

### **Temperature Variability and Mortality: A Multi-Country Study**

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#### **Table of Contents**

##### **Data Collection**

Australia

Brazil

Canada

China

Japan

Korea

Moldova

Spain

Taiwan

Thailand data

UK data

USA data

**Table S1.** Summary statistics for period, deaths, mean temperature, and temperature variability (from 0–1 day to 0–7 day’s exposure) in 372 communities in 12 countries/regions.

**Table S2.** Percent change (mean and 95% CI) of mortality associated with an IQR (inter-quartile range) increase in temperature variability (°C) on different exposure days in cold (four coldest months), hot (four hottest months) and moderate (except four coldest and four hottest seasons) seasons, after controlling for main effect of temperature.

**Figure S1.** Locations of communities stratified by cold, moderate cold, moderate hot and hot areas, by the quantiles ( $\leq 25^{\text{th}}$ ,  $25^{\text{th}}-50^{\text{th}}$ ,  $50^{\text{th}}-75^{\text{th}}$ , and  $>75^{\text{th}}$ ) of their annual mean temperatures (each community has one value of annual mean temperature).

**Figure S2.** Percent change (95% CI) in mortality associated with one degree increase in temperature variability (°C) on different exposure days, (A) after controlling for the effect of daily mean temperature, (B) without controlling for the effect of temperature.

**Figure S3.** Percent change (95% CI) in mortality associated with an IQR (for each community) increase in temperature variability (°C) on different exposure days, (A) after controlling for the effect of daily minimum temperature, (B) controlling for the effect of daily maximum temperature.

**Figure S4.** Percent change (95% CI) in mortality associated with future 7 days’ temperature variability (°C), after controlling for the main effect of temperature, seasonality, and day of the week.